 control circuit.

REMARKS

Attached hereto is a marked-up version of the changes made to the application by this Amendment.


Reconsideration and allowance of the subject application are respectfully requested.

Submitted concurrently herewith is a Drawing Change Authorization Request to label Fig. 3 prior art as requested by the Examiner. Accordingly, Applicants respectfully request that the Examiner withdraw the objection to Fig. 3.

Applicants have also amended the specification as requested by the Examiner, and request that the Examiner withdraw this objection as well.

Claims 23-44 are pending. Claims 23, 24, 26, 27, 28, 29, 31, 35, 36, 38, 42 and 44 have been amended.

Applicants note with appreciation the time and effort taken by the Examiner. During the Examiner interview of May 4, 2001 with Applicant's representative, Mr. Gary D. Yacura. During the Examiner interview both the Examiner's §112 first paragraph rejection and the art grounds of rejection based on the Dakin patent were discussed in detail.



With respect to the §112, first paragraph rejection, amendments to the claims were discussed that should overcome this rejection. While Applicants representative and the Examiner did not come to an agreement on specific claim language changes, Applicants have amended the claims such that it is now believed that the §112, first paragraph rejection, has been overcome.

With respect to claim 23, the Examiner objected to the language that the controller controls reproduction of only certain data units. The reproduction language has been deleted and the controller is now recited as controlling the signal processor to separate data units corresponding to one of the audio signals. Similar changes have been made to independent claims 28, 31 and 38 to overcome the similar objections thereto.

The Examiner has also objected to the "outputting only the decoded at least one of the audio channels" language such as recited in claim 31. This claim language has been deleted from the independent claims, and the dependent claims have been amended to eliminate the "decoded at least one of" language.

In view of the above, it is believed that the §112, first paragraph rejections have been overcome, and the Examiner is respectfully requested to withdraw this rejection.

Claims 23-27 and 44 stand rejection under 35 U.S.C. § 112, second paragraph. The antecedent basis problem noted by the Examiner in claims 23

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and 44 has been eliminated from the claims. Applicants respectfully request that the Examiner withdraw this rejection.

Claims 23 -44 stand rejected under 35 U.S.C. § 103 as being unpatentable over Applicant's admitted prior art in view of Dakin. Applicants respectfully traverse this art grounds of rejection.

Dakin discloses an audio message playback system wherein a plurality of audio messages are recorded in association with a video picture. Specifically, Dakin is directed toward stop-motion playback in which a single video image is displayed, and one of a plurality of audio messages can be heard with the video message. In terms of a data format, the audio messages are preceded by a plurality of pointers. Each pointer is an address to a different one of the audio messages. This data format is illustrated in Figs. 2 and 3A-3B. During operation, a user decides which of the audio messages to play back by selecting, for example, message 2, message 3 or message 4.

Dakin does not disclose or suggest "a plurality of audio signals encoded into audio channels wherein each audio signal is composed of data units, ...a block of the data units being sequentially interleaved between data units of video signal, each audio signal being represented by one of the data units in the block," as recited in claim 23. In other words, Dakin does not teach that message 2 for a first video image is related in any way to message 2 for a second video image. Therefore there is no disclosure or suggestion that the

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data units from several blocks of audio data form an audio signal encoded into an audio channel as recited in claim 23. Consequently, Dakin also fails to disclose or suggest "each data unit including indicating information for identifying the audio signal represented by the data unit," as recited in claim 23.

The Examiner has suggested combining the Dakin patent with the admitted prior art disclosed in, for example, Fig. 3 of the present invention. As shown therein, audio data units are interleaved with video data units. Furthermore, as evidenced by Fig. 4 of the present invention, the audio data units include coding information to distinguish an audio data unit from a video data unit. However, audio data units are not distinguished from one another based on the audio signal they represent. Therefore, like Dakin, the admitted prior art of the present application also fails to disclose or suggest "each data unit including indicating information for identifying the audio signal represented by the data unit," as recited in claim 23.

In keeping with the previous discussion regarding Dakin, even if the Examiner were to construe the pointers of Dakin as the claimed coding information, the resulting combination of Dakin with the admitted prior art would still not disclose or suggest the claimed invention. There is still no disclosure of representing more than one audio signal by data units spread over data blocks interleaved with data blocks of a video signal. Additionally, in

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Dakin, a user identifies a message unit to be heard. There is no distinction between the message units. By contrast, the controller of claim 23 controls the signal processor "to separate data units corresponding to one of the audio signals designated by user input."

For the reasons set forth above, Dakin alone or Dakin in view of the admitted prior art of the present application does not anticipate or render claim 23 obvious to one skilled in the art.

Independent claims 28, 31 and 38 include similar limitations to those discussed above with respect to claim 23, and are patentable at least for the reasons discussed above with respect to claim 23.

The remaining claims are dependent upon one of the above-discussed independent claims, and are patentable for the reasons stated above with respect to the independent claims as well as on their own merits.

Applicants respectfully request that the Examiner withdraw the art grounds of rejection.

In view of the above, it is believed that this application is in condition for allowance. A favorable action in the form of a Notice of Allowance is earnestly solicited.

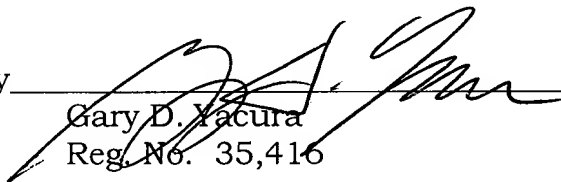
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In the event that any outstanding matters remain in this application, Applicant requests that the Examiner contact Gary D. Yacura (Reg. No. 35,416) at (703) 205-8071 to discuss such matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Gary D. Yacura
Reg. No. 35,416

GDY/kmr

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

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FIG.3

Prior Art

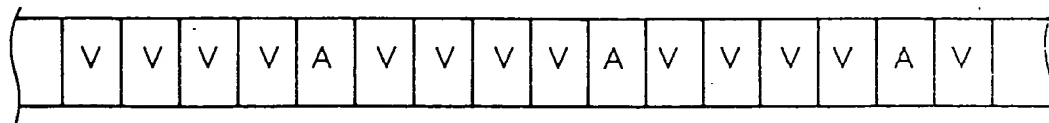
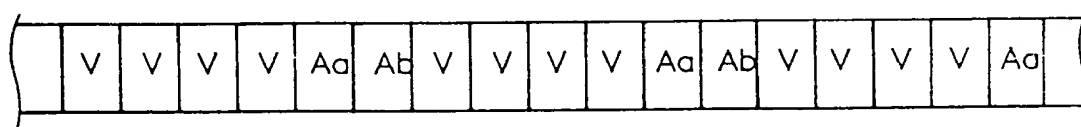


FIG.4

	MPEG video	MPEG audio
file number	sequence number	sequence number
channel number	\$ 01	\$ 01
submode	% *11*001*	% *11*010*
coding number	\$ 0F	\$ 7F

FIG.5



VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Abstract of the Disclosure:

The Abstract of the Disclosure has been amended as follows:

...

In the Specification:

The paragraph beginning on page 8, line 19 and continuing through page 9, line 16, has been amended as follows:

The audio signal processing part 70 includes a CPU 71 for separating audio data and time data from the signal received from the second demodulator 42 under the control of the control part 30, a STC (System Time Clock) part 77 for generating a synchronizing signal using time information received from the CPU 71, a memory 72 for storing the audio data received from the CPU 71, an MPEG audio decoder 73 for decoding the MPEG audio data stored in the memory 72, a demultiplexer 74 for separating data received from the MPEG audio decoder 73 into data corresponding to accompaniment sound and vocal sound and data corresponding to accompaniment sound and outputting the separated data under the control of the CPU 71, a first audio presentation part 75 for comparing the PTS (Presentation Time Stamp) in the data corresponding to the accompaniment sound received from the demultiplexer 74 to the signal received from the STC 77 to control presentation time of the data, and a second audio presentation part 76 for comparing the PTS (Presentation Time Stamp) in

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the data corresponding to accompaniment sound and vocal sound received from the demultiplexer 74 to the signal received from the STC 77 to control presentation time of the data, thereby processing the audio signal using signals received from the demodulation part 40 to separate the data into data corresponding to a first data containing [vocal] accompaniment sound only, and outputting the separate data.

The paragraph beginning on page 9, line 17 has been amended as follows:

The switch 50 selects one of the data corresponding to the accompaniment sound and vocal sound, or to only the [vocal] accompaniment sound received from the first and the second audio presentation parts 75 and 76 of the audio signal processing part 70 and transmits the selected data under the control of the control part 30.

In the Claims:

The claims have been amended as follows:

23. (Amended) A device for reproducing a digital signal recorded on a medium, the digital signal including a video signal, a plurality of audio signals encoded into audio channels wherein each audio signal is composed of data units and each data unit including [indicating] information for identifying

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[each] the audio signal represented by the data unit, a block of the data units being sequentially interleaved between data units of video signal, each audio signal being represented by one of the data units in the block, comprising:

a demodulator for demodulating the digital signal to restore an original signal;

a signal processor for receiving the plurality of audio signals, extracting the indicating information, separating the data units corresponding to at least one of the plurality of audio signals based on the extracted indicating information [and decoding the data units corresponding to at least one of the plurality of audio signals]; and

a controller, coupled to the signal processor, [to output the decoded data units corresponding to at least one of the plurality of audio signals in response to user selection, the controller] controlling the signal processor to separate [only reproduce] the data units corresponding to [the selected] one of the audio signals designated by user input.

24. (Amended) A device as claimed in claim 23, wherein the plurality of audio signals includes a first type audio signal and a second type audio signal each having different contents, and the controller separates the data units corresponding to one of the audio signals of the first and second type based on user input designating one of the audio signals of the first and second type.

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26. (Amended) A device as claimed in claim 23, wherein said signal processor further comprises:

a synchronizer for synchronizing the audio presentation time of at least one of the separated plurality of audio signals under control [according to controlling] of said controller.

27. (Amended) A device as claimed in claim 23, wherein the plurality of audio signals are encoded by MPEG coding mode, wherein the signal processor further comprises:

an MPEG audio decoder for decoding [at least one of] said plurality of audio signals [received].

28. (Amended) A method for reproducing a digital signal recorded on a medium, said digital signal including a video signal, a plurality of audio signals encoded into audio channels wherein each audio signal is composed of at least data units of audio information, and each data unit including indicating information for identifying [each] the audio signal represented by the data unit, a block of the data units being sequentially interleaved between data units of video signal, each audio signal being represented by one of the data units in the block, comprising the steps of:

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demodulating the digital signal to restore an original signal;
receiving the video signal and the plurality of audio signals;
extracting the indicating information;
separating the data units corresponding to at least one of the plurality of
audio signals based on the extracted indicating information; and
[decoding the data units corresponding to at least one of the plurality of
audio signals; and]
controlling the separating [extracting and decoding] step[s] to separate
[only reproduce] data units corresponding to one of the plurality of audio
signals in response to user input designating one of the plurality of audio
signals.

29. (Amended) The method of claim 28, wherein the step of separating
[extracting] includes separating [extracting accompaniment sound
corresponding to] one of the audio signals representing accompaniment sound.

31. (Amended) A device for processing a digital signal, comprising:
an audio signal processor receiving indicating information and first units
of digital audio data interleaved at a predetermined interval with second units
of digital video data, the digital audio data including more than one audio
channel, and the indicating information indicating a presence of the audio

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channels in the digital audio data, the audio signal processor extracting the indicating information, and [decoding and] separating [at least] one of the audio channels using the indicating information; and

a control circuit controlling the audio signal processor to separate [outputting only the decoded at least] one of the audio channels based on user input designating one of the audio channels.

35. (Amended) The device of claim 31, further comprising:

a timing signal generator generating a timing signal; and wherein

the audio signal processor compares the timing signal to timing information in the digital audio data, and outputs the [decoded at least] separated one of the audio channels based the comparison.

36. (Amended) The device of claim 31, wherein the audio signal processor MPEG decodes the [at least one of the] audio channels.

38. (Amended) A method for processing a digital signal, comprising:

receiving indicating information and first units of digital audio data interleaved at a predetermined interval with second units of digital video data, the digital audio data including more than one audio channel, and the indicating information indicating a presence of the audio channels in the digital

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audio data;

extracting the indicating information;

[decoding and] separating [at least] one of the audio channels using the indicating information[;] and [outputting only the decoded at least one of the audio channels based on] user input designating one of the audio channels.

42. (Amended) The method of claim 38, further comprising:

generating a timing signal;

comparing the timing signal to timing information in the digital audio data; and [wherein]

[the] outputting the separated [step outputs the decoded at least] one of the audio channels based on the comparison.

43. (Amended) The device of claim 38, wherein the [decoding and] separating step includes MPEG [decodes] decoding [the at least one of] the audio channels.

44. (Amended) The device of claim 23, wherein the signal processor includes a switch that selectively outputs the data units under control of the control circuit [corresponding to the selected audio signal].

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